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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,796	09/18/2003	Jacob Johannes Scholtz	F124C1	3492
25784	7590	02/08/2005		
MICHAEL O. SCHEINBERG P.O. BOX 164140 AUSTIN, TX 78716-4140			EXAMINER GURZO, PAUL M	
			ART UNIT 2881	PAPER NUMBER

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,796

Applicant(s)

SCHOLTZ ET AL.

Examiner

Paul Gurzo

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2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>0504</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recited the limitation "ion collector" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 16-18 recite the limitation "gas amplification" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 11, 12, and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Meisberger et al. (5,578,821).

Regarding claim 1, 821 teaches a particle optical apparatus comprising a sample holder (24) for receiving a sample (57), a particle source (81) for producing a primary beam of charged particles, a first detection means (117) arranged for amplifying and detecting secondary electrons (col. 9, lines 5-11), a detection space formed by the sample holder and first detection means (col.

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7, line 65 - col. 8, line 11 and Fig. 4). They also teach the use of an immersion lens (col. 11, lines 12-27), magnetic and electric fields that are oriented in a traverse manner (col. 10, lines 49-53), and a gas in the detection space (col. 3, lines 40-43).

Regarding claims 11 and 12, 821 teaches electrically biasing the sample (col. 8, lines 53-56) and a plurality of detectors providing an output signal composed of a combination of at least two signals provided by the detection means (col. 7, lines 4-17).

Regarding claims 16-18, 821 teaches that the gas amplification can be 1000 and 5000 (col. 13, lines 4-21), and it is inherent that the amplification can be greater if the voltage is increased.

Regarding claims 19 and 20, 821 teaches a ring shaped electrode (83), amplification means, a first detection means (117) arranged for detecting secondary electrons, a sample holder (24) for receiving a sample (57), a particle source (81) for producing a primary beam of charged particles, an immersion lens (col. 11, lines 12-27 and Fig. 4), a gas introduction (col. 3, lines 40-43), and magnetic and electric fields that are oriented in a traverse manner (col. 10, lines 49-53).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-10 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meisberger et al. (5,578,821), and further in view of Van Der Mast (6,184,525).

Regarding claims 2-10, 821 teaches the use of a first, second, and third detector (117, 127, and 160) for detecting the desired particles (Fig. 4). These detectors act in the same manner as the claimed detectors, and adding a fourth detector is obvious to the prior art because it will increase the ability to inspect. They do not explicitly teach that the detector comprises a first electrode. However, 525 teaches a detector electrode (30) that is arranged for detecting electrons and comprises a central opening which is symmetrically formed around the optical axis (col. 5, lines 1-27 and Fig. 2). In addition, 525 teaches the formation of ions which arise in the gas discharge (col. 4, lines 8-29), any of the detectors will act as collectors to collect liberated ions due to interactions between the gas and electrons. It is obvious that an electric field is produced by the electrode, and that electric field and magnetic can be oriented in the proper manner based on the voltage application to the electrodes. Further, it would have been obvious to extend this detection in conjunction with an electrode to include all of the detectors.

821 depicts the claimed second detection means (160) that is located between the sample and the first detection means (Fig. 4). They also teach a third detector, but do not teach the exact placement of this detector. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the prior art to place the detectors in the desired location, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Regarding claims 13-15, it is obvious that the appropriate voltage application in the prior art, assuming a constant mass and charge of the electrons, will result in the desired electric field strength, and 821 teaches the desired amplification domain (col. 13, lines 4-21). Further, the

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appropriate fields will produce the appropriate oscillation and amplification (See 525, col. 3, lines 13-63), and this will lead to the claimed Penning enhance magnification.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Meisburger et al. (5,502,306)

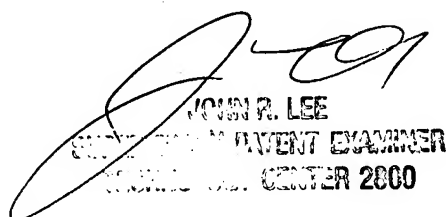
Shinada et al. (6,329,826)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (571) 272-2472. The examiner can normally be reached on M-Fri. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached at (571) 272-2477. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG
January 28, 2005


JOHN R. LEE
SENIOR PATENT EXAMINER
TECHNICAL CENTER 2000